AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

Claims 1-3. (canceled).

4. (currently amended): [The] A method of manufacturing a semiconductor device, [as claimed in claim 3,] comprising the steps of:

forming an organic low dielectric constant film on a substrate;

forming a silicon-containing insulating film on said organic low dielectric constant film;

removing a part of said silicon-containing insulating film to form a first opening; and

etching said organic low dielectric constant film using said silicon-containing insulating film with said first opening as a first mask;

wherein said step of etching said organic low dielectric constant film is carried out using a gas comprising NH_3; and

wherein said silicon-containing insulating film comprises one of SiO_2, SiN, SiC, SiOF, an organic SOG, an inorganic porous film, and an inorganic low dielectric constant film.

5. (currently amended): The method of manufacturing a semiconductor device as claimed in claim [3] 4, wherein said organic low dielectric constant film comprises at least one of a silicon-free organic film, a hydrocarbon-based organic low dielectric constant film, an aromatic-based organic low dielectric constant film, and a fluorine-containing resin film.

6. (currently amended): The method of manufacturing a semiconductor device as claimed in claim [3] 4, further comprising steps of:

forming a photo-resist on said silicon-containing insulating film; and

removing a part of said photo-resist to form a second opening,

wherein said step of removing a part of said silicon-containing insulating film is carried out using said photo-resist with said second opening as a second mask, and

wherein said photo-resist is removed during said step of etching said organic low dielectric constant film.

Claims 7-12. (canceled).

13. (currently amended): [The] A method of manufacturing a semiconductor device, [as claimed in claim 12,] comprising the steps of:

forming an organic low dielectric constant film on a substrate;

forming a silicon-containing insulating film on said organic low dielectric constant film;

removing a part of said first silicon-containing insulating film to form a first opening;

etching said organic low dielectric constant film using said first silicon-containing insulating film with said first opening as a first mask in order to form at least one through-hole penetrating said first organic low dielectric constant film and said first silicon-containing insulating film;

forming a first barrier metal on an entire inside surface of said at least one through-hole; and

forming a first connection metal film on said first barrier metal film, so as to fill said at least one through-hole;

wherein said step of etching said organic low dielectric constant film is carried out using a gas comprising NH_3; and

wherein said first silicon-containing insulating film comprises one of SiO_2, SiN, SiC, SiOF, an organic SOG, an inorganic porous film, and an inorganic low dielectric constant film.

14. (currently amended): The method of manufacturing a semiconductor device as claimed in claim [12] 13, wherein said first organic low dielectric constant film comprises at least one of a silicon-free organic film, a hydrocarbon-based organic low dielectric constant film, an aromatic-based organic low dielectric constant film, and a fluorine-containing resin film.

15. (currently amended): The method of manufacturing a semiconductor device as claimed in claim [12] 13, further comprising steps of:

forming a photo-resist on said silicon-containing insulating film; and

removing a portion of said photo-resist to form a second opening,

wherein said step of removing a portion of said first silicon-containing insulating film is carried out using said photo-resist with said second opening as a second mask, and

wherein said photo-resist is removed during said step of etching said first organic low dielectric constant film.

Claim 16. (canceled).

17. (currently amended): The method of manufacturing a semiconductor device as claimed in claim [16] 15, further comprising steps of:

forming a second organic low dielectric constant film on said first silicon-containing insulating film and said first connection metal film formed on said first organic low dielectric constant film;

forming a second silicon-containing insulating film on said second organic low dielectric constant film;

removing a portion of said second silicon-containing insulating film to form a third opening; and

etching said second organic low dielectric constant film using said second silicon-containing insulating film with said third opening as a third mask in order to form at least a second through-hole penetrating said second organic low dielectric constant film and said second silicon-containing insulating film;

wherein said step of etching said second organic low dielectric constant film is carried out using a gas comprising NH_3.

Claim 18. (canceled).

19. (currently amended): The method of manufacturing a semiconductor device as claimed in claim [18] 17, further comprising steps of:

forming a second barrier metal film on an entire inside surface of said at least second through-hole interconnected with said first connection metal film and said first barrier metal film; and

forming a second connection metal film on said second barrier metal film, so as to fill said at least second through-hole.

20. (withdrawn): A semiconductor device having a multilayer wiring structure, comprising:

a substrate;

an interlayer insulating film comprising an organic low dielectric constant film disposed on the substrate and a silicon-containing insulating film disposed on said organic low dielectric constant film; and

a through-hole formed in said interlayer insulating film;

wherein said through-hole is formed by dry etching with a gas comprising NH_3 and has an aspect ratio that is larger than 1.5.

21. (new): The method of manufacturing a semiconductor device as claimed in claim 4, wherein said gas comprising NH_3 additionally comprises at least one of N_2, H_2, and O_2.

22. (new): The method of manufacturing a semiconductor device as claimed in claim 13, wherein said gas comprising NH_3 additionally comprises at least one of N_2, H_2, and O_2.